OIPE JC10 MAR 22 2004 PATENT & TRADEMARK OFFICE

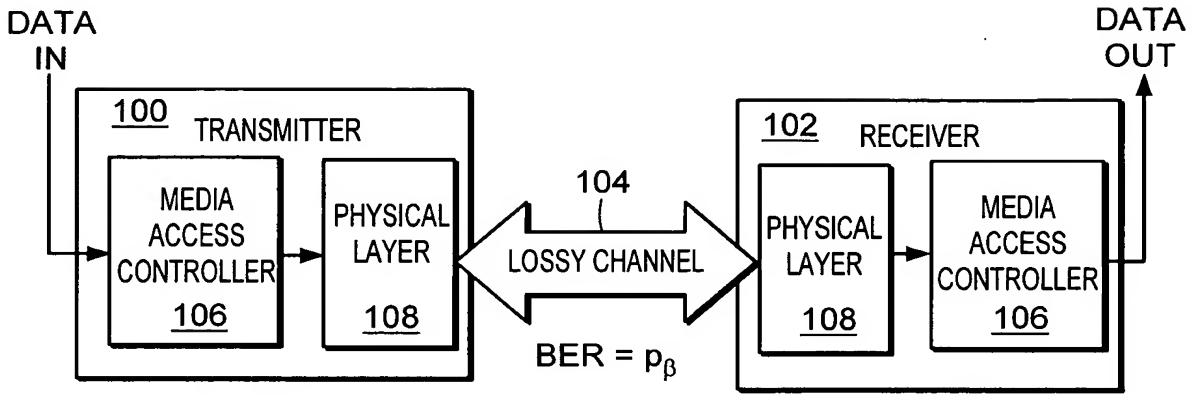

FIG. 1

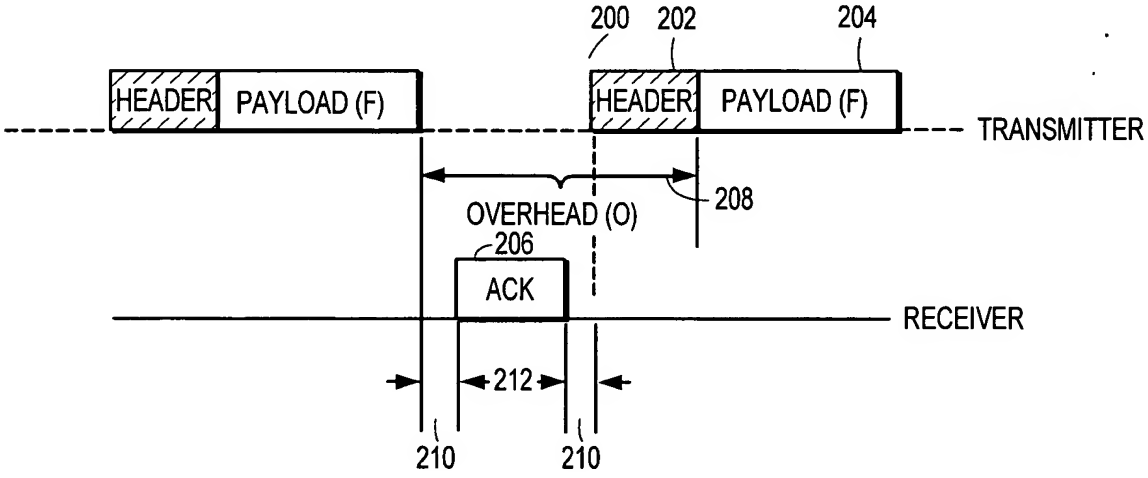

FIG. 2

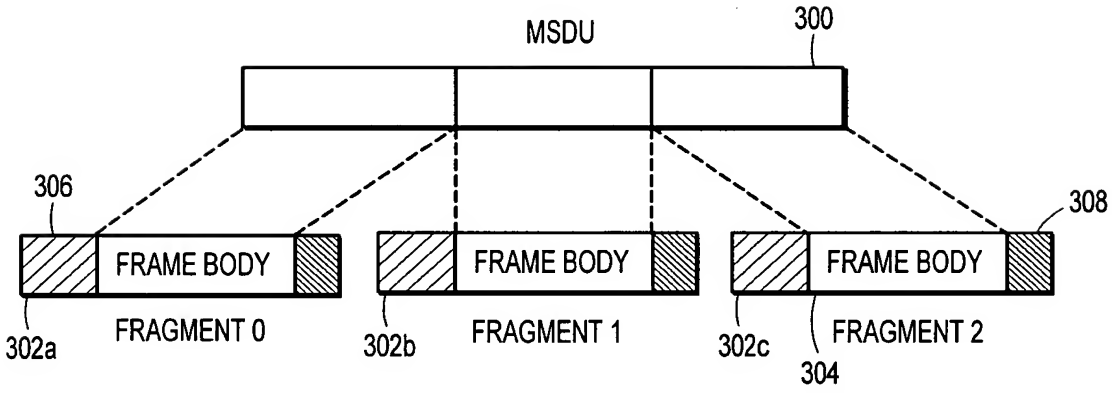
MSDU
300
306
308
FRAME BODY
FRAME BODY
FRAME BODY
302a
FRAGMENT 0
302b
FRAGMENT 1
302c
FRAGMENT 2
304

FIG. 3

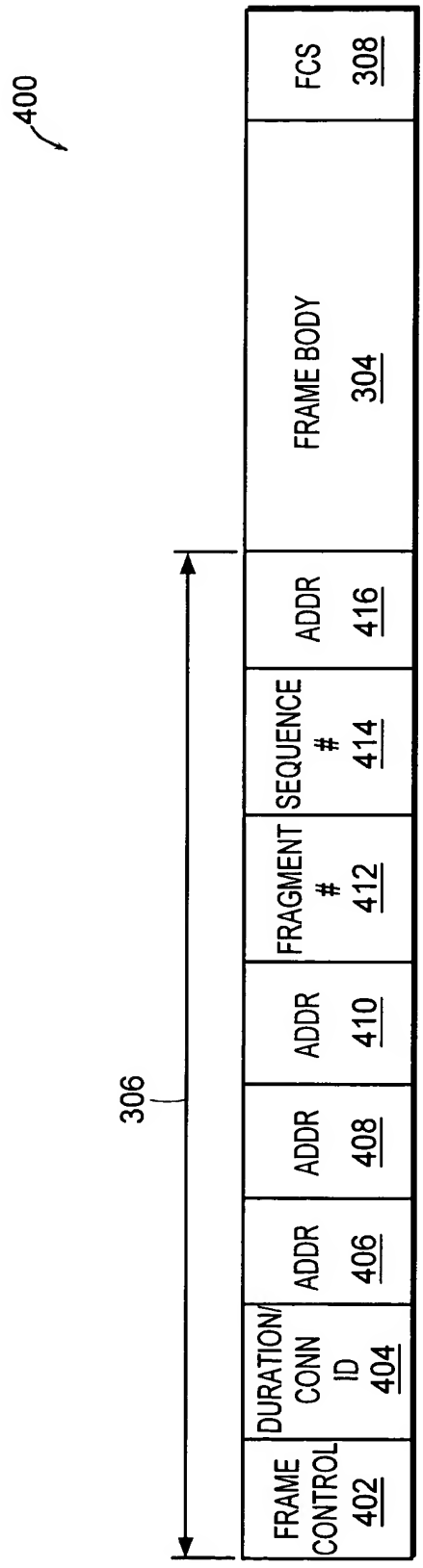
400
306
FRAME CONTROL 402
DURATION/ CONN ID 404
ADDR 406
ADDR 408
ADDR 410
FRAGMENT # 412
SEQUENCE # 414
ADDR 416
FRAME BODY 304
FCS 308

FIG. 4

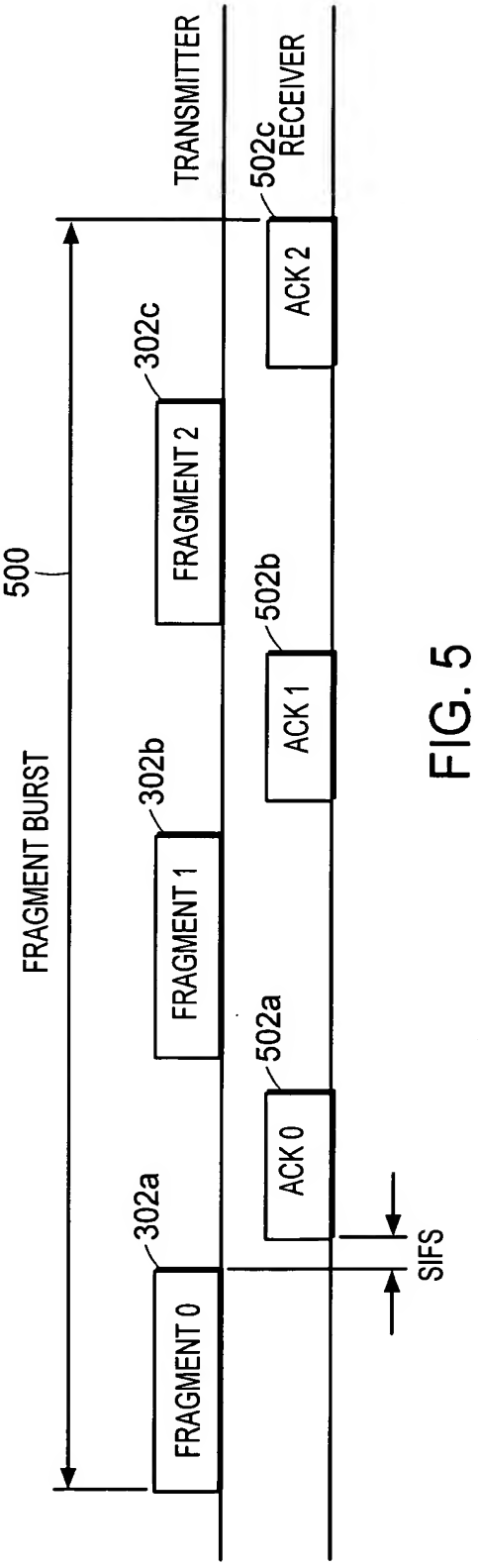
500
FRAGMENT BURST
TRANSMITTER
502c RECEIVER
302a
FRAGMENT 0
ACK 0
502a
302b
FRAGMENT 1
ACK 1
502b
302c
FRAGMENT 2
ACK 2
SIFS

FIG. 5

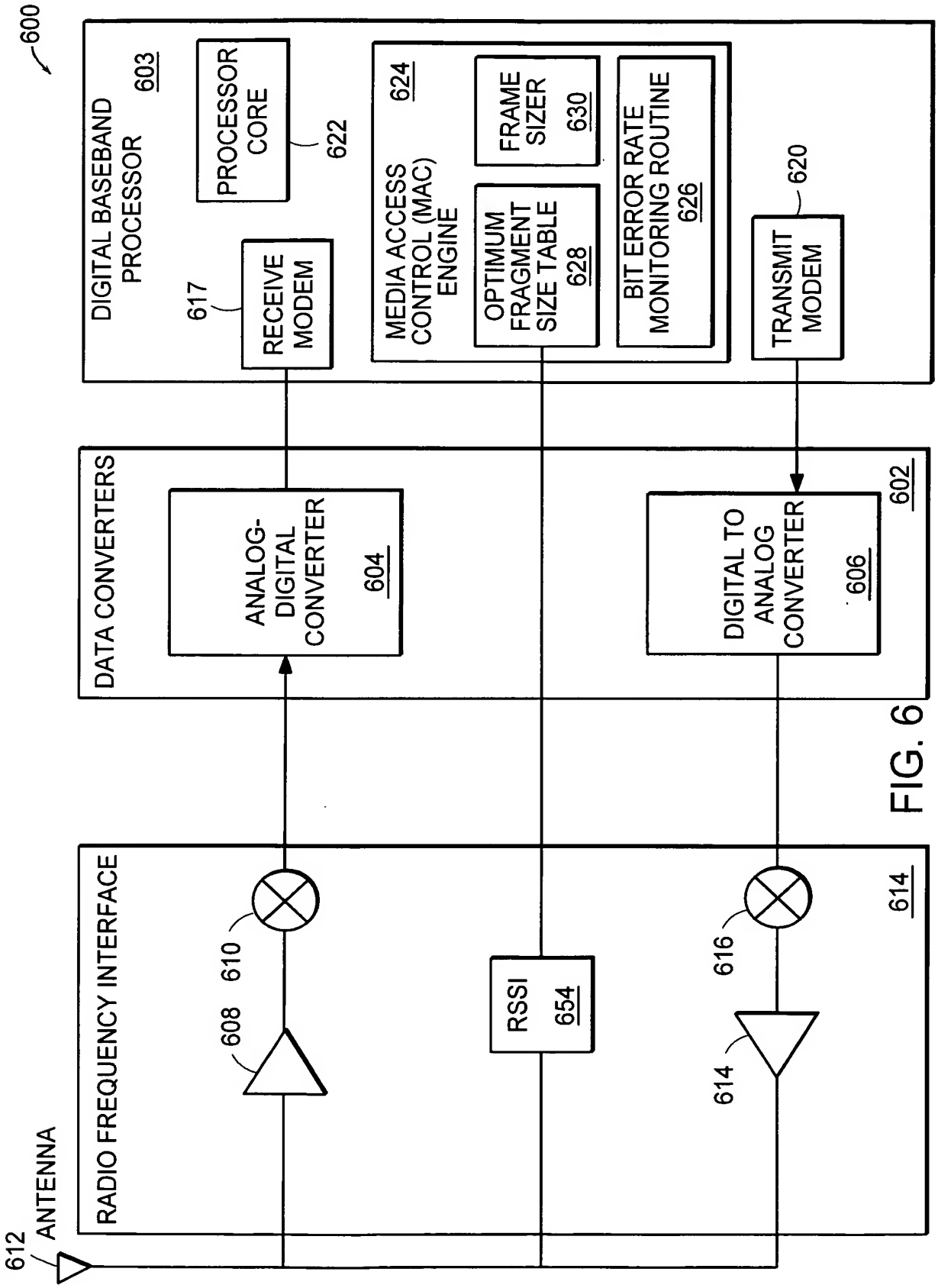
600
DIGITAL BASEBAND PROCESSOR 603
PROCESSOR CORE 622
617
RECEIVE MODEM
MEDIA ACCESS CONTROL (MAC) ENGINE 624
OPTIMUM FRAGMENT SIZE TABLE 628
FRAME SIZER 630
BIT ERROR RATE MONITORING ROUTINE 626
620
TRANSMIT MODEM
DATA CONVERTERS
ANALOG-DIGITAL CONVERTER 604
DIGITAL TO ANALOG CONVERTER 606
602
RADIO FREQUENCY INTERFACE
608
610
RSSI 654
616
614
614
612
ANTENNA

FIG. 6

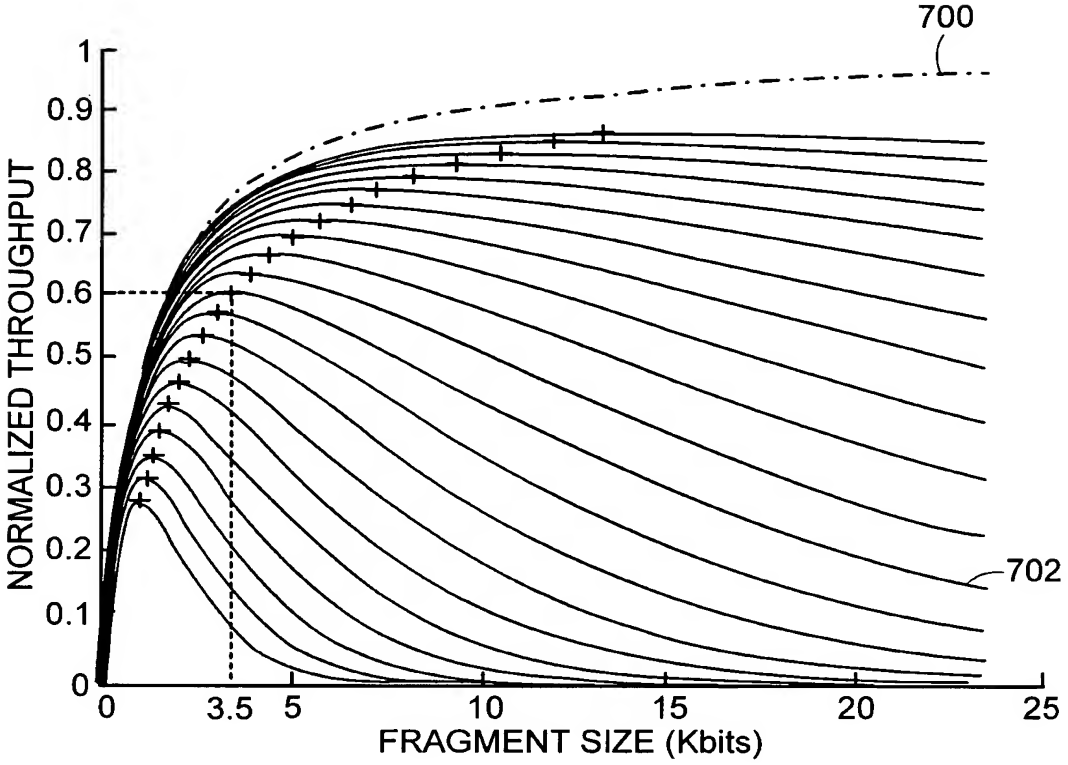
700
702
NORMALIZED THROUGHPUT
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
3.5
5
10
15
20
25
FRAGMENT SIZE (Kbits)

FIG. 7

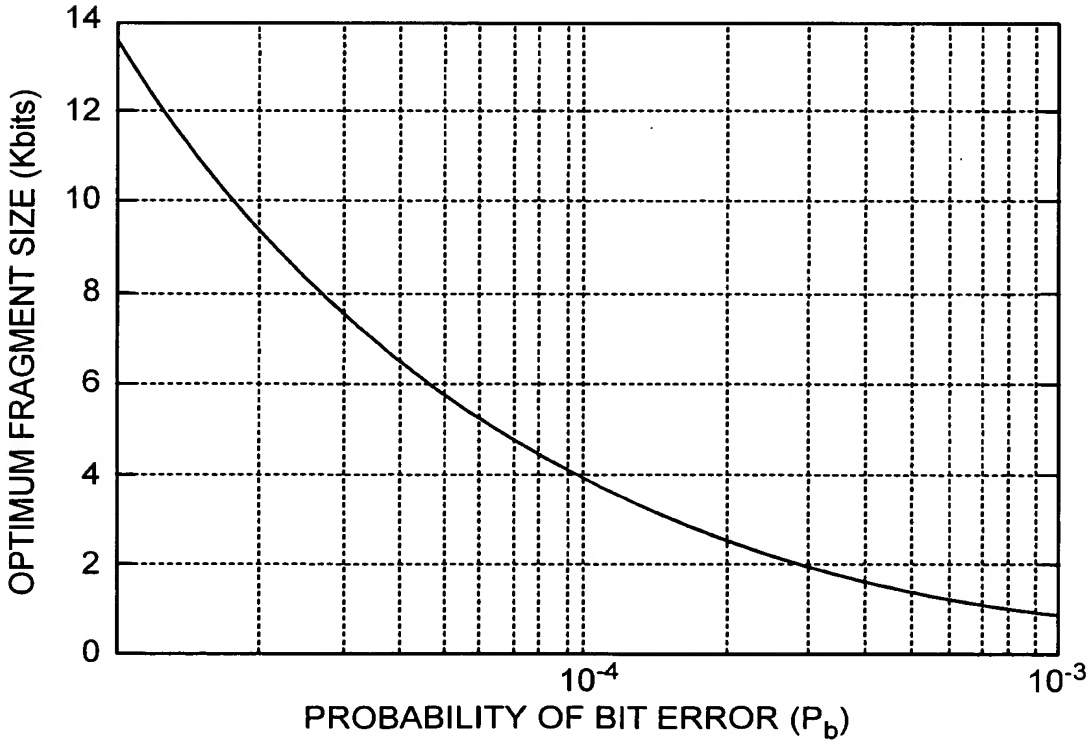
OPTIMUM FRAGMENT SIZE (Kbits)
14
12
10
8
6
4
2
0
10^{-4}
10^{-3}
PROBABILITY OF BIT ERROR (P_b)

FIG. 8

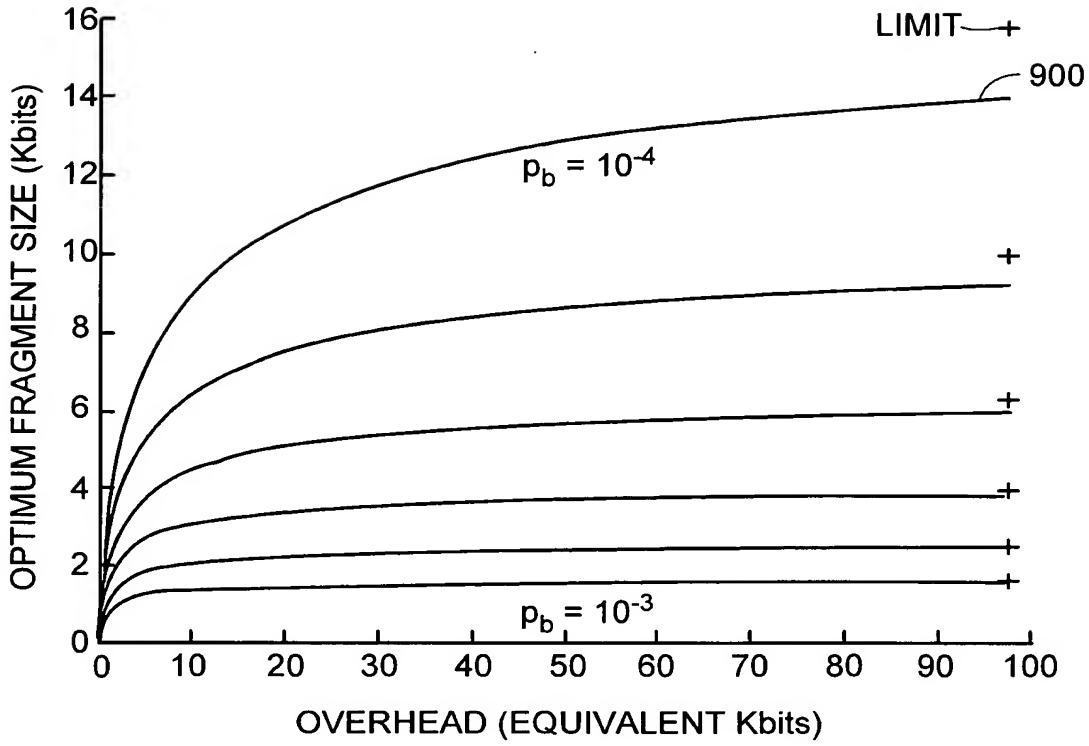
LIMIT
900
$p_b = 10^{-4}$
$p_b = 10^{-3}$
OPTIMUM FRAGMENT SIZE (Kbits)
OVERHEAD (EQUIVALENT Kbits)
0
2
4
6
8
10
12
14
16
0
10
20
30
40
50
60
70
80
90
100

FIG. 9

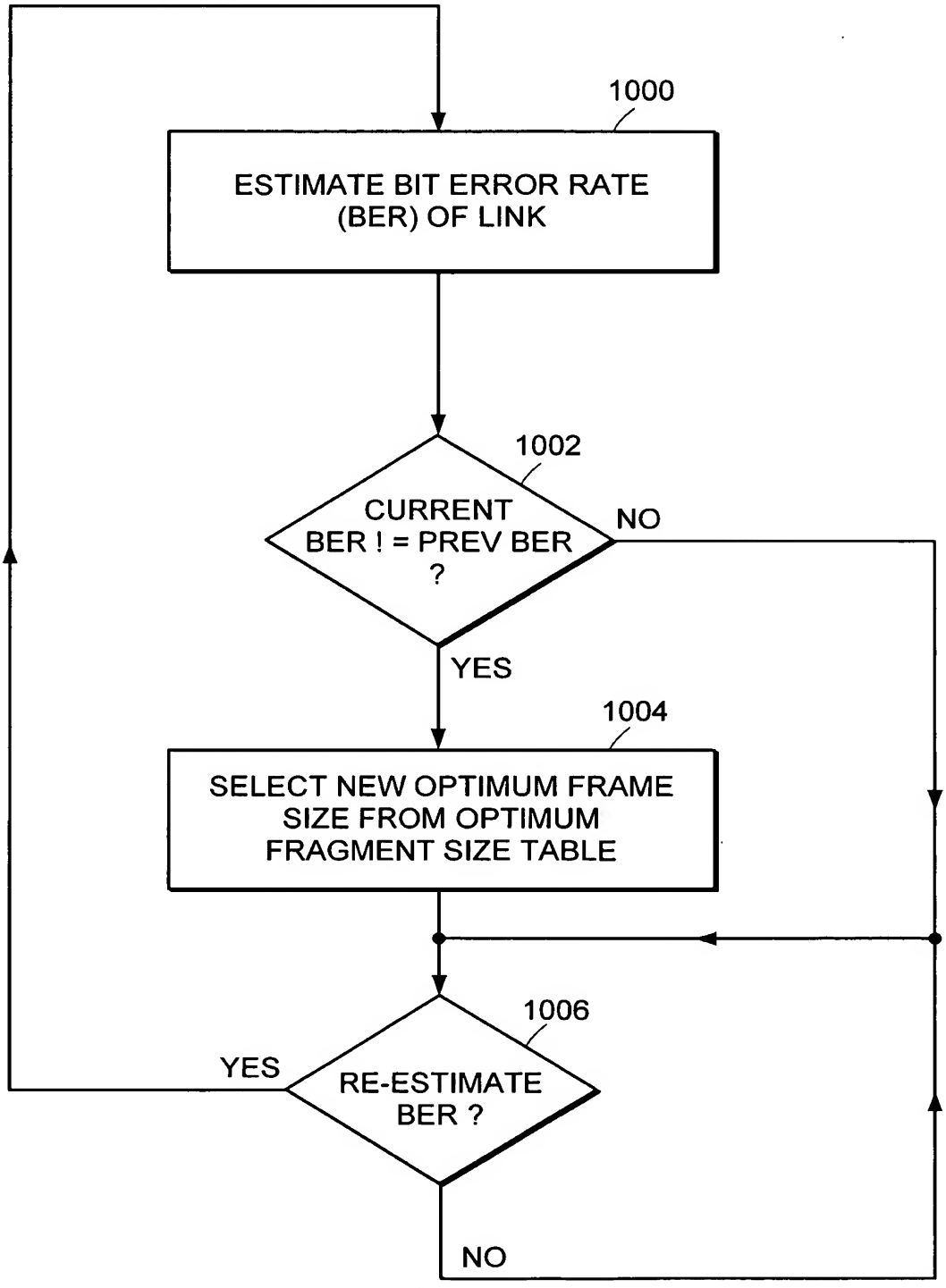
1000
ESTIMATE BIT ERROR RATE (BER) OF LINK
1002
CURRENT BER ! = PREV BER ?
NO
YES
1004
SELECT NEW OPTIMUM FRAME SIZE FROM OPTIMUM FRAGMENT SIZE TABLE
1006
YES
RE-ESTIMATE BER ?
NO

FIG. 10